Claims

1. A process for separation of zinc and a second metal not forming an anionic complex in the presence of chloride ions, the zinc and the second metal being present in an effluent (1, 9) in the form of $ZnCl_2$ and second metal chloride, consisting of forming and fixing the anionic $ZnCl_3^-$ complex on a resin (12),

wherein the formation of the anionic $ZnCl_3^-$ complex is obtained by placing the effluent (1, 9) in contact with the resin (12) saturated in chloride ions, and in that the process further comprises the stages of:

- extraction of the second metal chloride by means of a first eluent (13), then
- extraction of the zinc with the degree of oxidation +II.

2. The process as claimed in Claim 1, wherein the second metal is a transition metal, preferably selected from Cr, Cu, Ni, and Fe.

3. The process as claimed in Claim 1, wherein saturation of the resin (12) is performed by a solution whereof the concentration of chloride ions is greater than or equal to 0.7 mol/l approximately and, preferably, between 1 and 1.3 mol/l approximately.

4. The process as claimed in Claim 3, wherein the solution enabling saturation of the resin (12) is a solution of HCl or NaCl.

5. The process as claimed in any one of Claims 1 to 4, wherein the first eluent (13) is a solution whereof the concentration of chloride ions is greater than or equal to 0.7 mol/l approximately and, preferably, between 1 and 1.3 mol/l approximately.

6. The process as claimed in any one of Claims 1 to 5, wherein the first eluent (13) is a solution of HCl or NaCl.

7. The process as claimed in any one of Claims 1 to 6, wherein the metal chloride, extracted by the first eluent (13), is precipitated with a precipitation reagent (16), preferably an alkaline reagent.

8. The process as claimed in Claim 7, wherein the alkaline reagent is selected from soda, lime, and potassium.

9. The process as claimed in Claim 7 or 8, wherein the precipitation reagent (16) is introduced in quantities reaching the pH corresponding to the minimum solubility of the second metal cation precipitate.

10. The process as claimed in any one of Claims 1 to 9, wherein the extraction stage of the zinc with the degree of oxidation +II is performed after complete extraction of the metal chloride.

11. The process as claimed in any one of Claims 1 to 10, wherein, after the extraction stage of the metal chloride, the process comprises a dissociation stage of the $ZnCl_3^-$ complex to form $ZnCl_2$ and extraction of the $ZnCl_2$ thus obtained by means of a second eluent (21) allowing dilution of the concentration of chloride ions.

12. The process as claimed in Claim 11, wherein the second eluent (21) is a solution whereof the concentration of chloride ions is less than 1 mol/l approximately.

13. The process as claimed in Claim 11 or 12, wherein the second eluent (21) is selected from NaCl, water.

14. The process as claimed in any one of Claims 11 to 13, wherein the $ZnCl_2$ extracted by the second eluent (21) is

precipitated with a precipitation reagent (24), preferably an alkaline reagent or a sulphide.

15. The process as claimed in Claim 14, wherein the alkaline reagent is selected from among soda, lime and potassium.

16. The process as claimed in Claim 14 or 15, wherein the precipitation reagent (24) is introduced in quantities reaching the pH corresponding to the minimum solubility of the precipitate of Zn_2+.

17. The process as claimed in any one of Claims 1 to 10, wherein, after the extraction stage of the metal chloride, the process comprises a desorption stage of the zinc with the degree of oxidation +II by transformation of the $ZnCl_3^-$ complex into a zinc complex more stable than the $ZnCl_3^-$ complex.

18. The process as claimed in Claim 17, wherein the desorption stage is produced by a solution of ammonia.

19. The process as claimed in any one of Claims 1 to 10, wherein, after the extraction stage of the metal chloride, the process comprises an electrolytic desorption stage of the zinc with the degree of oxidation +II.

20. The process as claimed in any one of Claims 1 to 19, wherein it further comprises a previous extraction stage of the calcium present in the effluent (1).

21. The process as claimed in Claim 20, wherein the extraction is produced by addition of sulphuric acid, in stoichiometric quantities.